

## Arun Platform Tide Gauge

### Location

OS: 506423E 97778N  
 WGS84: Latitude: 50° 46' 11.3904"N Longitude: 00° 29' 31.7360"W

### Instrument Type

Valeport 730 (Druck Pressure Transducer)



### Benchmarks

#### Benchmark

<i>Benchmark</i>	<i>Description</i>
TGBM = 10.334m above Ordnance Datum Newlyn	Top of transducer pole
TGZ = -3.79m above Ordnance Datum Newlyn	
TGZ = -0.74m above Chart Datum	
TGZ = 14.124m below TGBM	

### Datum

All data are to Ordnance Datum Newlyn. The height of Chart Datum relative to Ordnance Datum at Littlehampton and Bognor Regis is -3.05m (Admiralty Tide Tables, Supplementary Table III).

### Survey information

The site was surveyed on 09 October 2008.

### Site characteristics

The Platform is approximately 3.7km offshore, with no other nearby structures. The Platform leg is approximately 1.2m diameter and some wave reflection and other wave interference can occur. Spring tidal range is 5.2m.

### Data Quality

Recovery rate (%)	Sample interval
98	10 minutes

### Service history

The gauge became operational on 01 August 2008.

## Measurements

The pressure transducer samples at 2Hz. Tidal elevations are derived, every 10 minutes, as the 40 second average of the 2Hz readings. The time stamp is the start of the measuring burst. Although the time stamp is accurate, the instrument has to be started manually after servicing and it is not always possible to start exactly on a 10 minute integer. Measurements are interpolated to the hour and 10 minute intervals, if the original time series is not on the hour. Missing data exceeding 2 hours are not interpolated. All data measured prior to the gauge being fully surveyed were adjusted to the correct elevations.

Residuals and Elevations (OD and CD) for the whole year are shown in Figures 1 to 3 respectively.

## Statistics

*All times GMT*

Month	Extreme maxima		Extreme minima	
	Elevation (OD)	Date/Time	Elevation (OD)	Date/Time
January	2.96	06-Jan-2011 12:40	-2.73	22-Jan-2011 19:00
February	3.17	20-Feb-2011 12:40	-2.81	19-Feb-2011 18:00
March	3.18	22-Mar-2011 00:40	-2.89	21-Mar-2011 18:10
April	3.18	20-Apr-2011 00:00	-2.70	18-Apr-2011 17:10
May	2.94	19-May-2011 00:00	-2.55	18-May-2011 05:20
June	2.91	18-Jun-2011 12:50	-2.26	17-Jun-2011 05:40
July	2.92	17-Jul-2011 12:10	-2.33	04-Jul-2011 06:50
August	3.19	31-Aug-2011 12:30	-2.66	31-Aug-2011 06:10
September	3.27	29-Sep-2011 12:10	-2.75	28-Sep-2011 05:00
October	3.40	27-Oct-2011 10:50	-2.57	28-Oct-2011 05:30
November	3.41	28-Nov-2011 00:40	-2.60	26-Nov-2011 17:40
December	3.20	26-Dec-2011 12:00	-2.54	26-Dec-2011 18:20

Month	Surge maxima		Surge minima	
	Value (m)	Date/Time	Value (m)	Date/Time
January	0.54	08-Jan-2011 06:00	-0.37	23-Jan-2011 12:10
February	0.50	04-Feb-2011 23:00	-0.37	04-Feb-2011 08:40
March	0.22	12-Mar-2011 14:20	-0.45	03-Mar-2011 21:30
April	0.14	30-Apr-2011 08:30	-0.26	17-Apr-2011 10:20
May	0.25	24-May-2011 17:30	-0.38	24-May-2011 03:40
June	0.30	17-Jun-2011 19:50	-0.29	01-Jun-2011 08:30
July	0.32	24-Jul-2011 11:20	-0.19	04-Jul-2011 13:10
August	0.28	08-Aug-2011 03:00	-0.21	10-Aug-2011 17:00
September	0.29	12-Sep-2011 06:20	-0.35	06-Sep-2011 18:30
October	0.38	18-Oct-2011 13:00	-0.23	14-Oct-2011 12:30
November	0.66	28-Nov-2011 02:10	-0.25	25-Nov-2011 10:50
December	0.67	01-Dec-2011 23:10	-0.53	08-Dec-2011 22:10

Month	Mean Level	
	No. of days	Elevation (OD)
January	31	0.225
February	28	0.216
March	31	0.115
April	30	0.164
May	31	0.171
June	30	0.209
July	31	0.232
August	31	0.246
September	30	0.261
October	31	0.264
November	30	0.276
December	31	0.329

Highest values in 2011			
Extreme		Surge	
Elevation (OD) (Surge component)	Date/Time	Value (m)	Date/Time
3.41 (0.52)	28-Nov-2011 00:40	0.67	01-Dec-2011 23:10
3.40 (0.18)	27-Oct-2011 10:50	0.66	28-Nov-2011 02:10
3.27 (-0.06)	29-Sep-2011 12:10	0.65	02-Dec-2011 02:50
3.26 (0.01)	28-Oct-2011 11:50	0.64	16-Dec-2011 06:00
3.22 (0.25)	25-Nov-2011 23:20	0.61	09-Dec-2011 14:20
3.22 (-0.09)	28-Sep-2011 11:30	0.60	12-Dec-2011 22:10
3.20 (0.26)	26-Dec-2011 12:00	0.59	03-Dec-2011 22:40
3.20 (0.11)	26-Oct-2011 10:00	0.54	08-Jan-2011 06:00
3.19 (-0.08)	31-Aug-2011 12:30	0.54	14-Dec-2011 18:10
3.18 (-0.03)	20-Apr-2011 00:00	0.50	04-Feb-2011 23:00

Year	Annual extreme maxima		Annual surge maxima		Z <sub>0</sub> (OD)	Annual recovery rate
	Elevation (OD) (Surge)	Date/Time	Value (m)	Date/Time		
2009	3.40 (0.40)	09-Feb-2009 23:20	0.85	23-Jan-2009 08:00	0.222	99%
2010	3.46 (0.17)	30-Mar-2010 23:50	0.67	16-Dec-2010 18:10	0.253	98%
2011	3.41 (0.52)	28-Nov-2011 00:40	0.67	01-Dec-2011 23:10	0.230	98%

Tidal levels		
Observation period	August 2008 to December 2011	
Tide Level	Elevation (OD)	Elevation (CD)
HAT	3.47	6.52
MHWS	2.81	5.86
MHWN	1.55	4.60
MSL	0.23	3.28
MLWN	-1.09	1.96
MLWS	-2.36	0.69
LAT	-2.83	0.22

### General

The time series of 10 minute tidal elevations for one year is quality-checked in accordance with ESEAS guidelines, flagged and archived. The archived time series is continuous and monotonic, with missing data given as 9999. The missing data shown are days where the entire 24 hours of data are missing.

Monthly [extreme maxima/minima](#) are the maximum and minimum water levels from all measured data for that month. Monthly [surge maxima/minima](#) (residuals) are calculated in a similar manner from the time series of residuals. Residuals are derived as the measured tidal elevation minus the predicted tidal elevation.

The monthly Mean Level is calculated as the average of all readings for the given month. The annual  $Z_0$  is the value of Mean Sea Level derived by the harmonic analysis of the year's data. These values should not be used for any purpose without consideration of the recovery rate.

### Acknowledgement

Tidal predictions were produced using the TASK2000 software, kindly provided by the Permanent Service for Mean Sea Level (PSMSL), Proudman Oceanographic Laboratory. Tide levels were produced by EMU Limited.

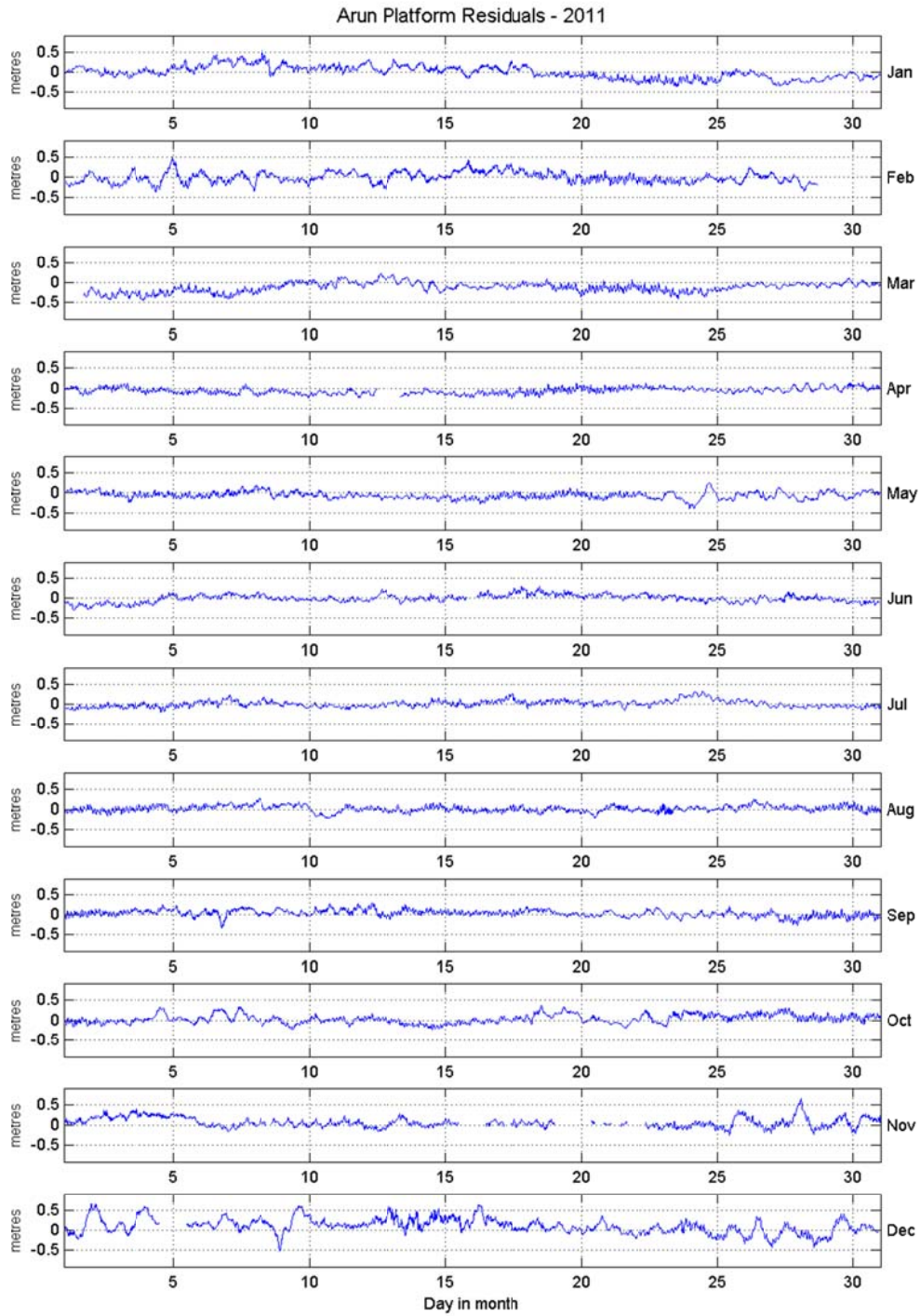


Figure 1: Arun Platform residuals for 2011

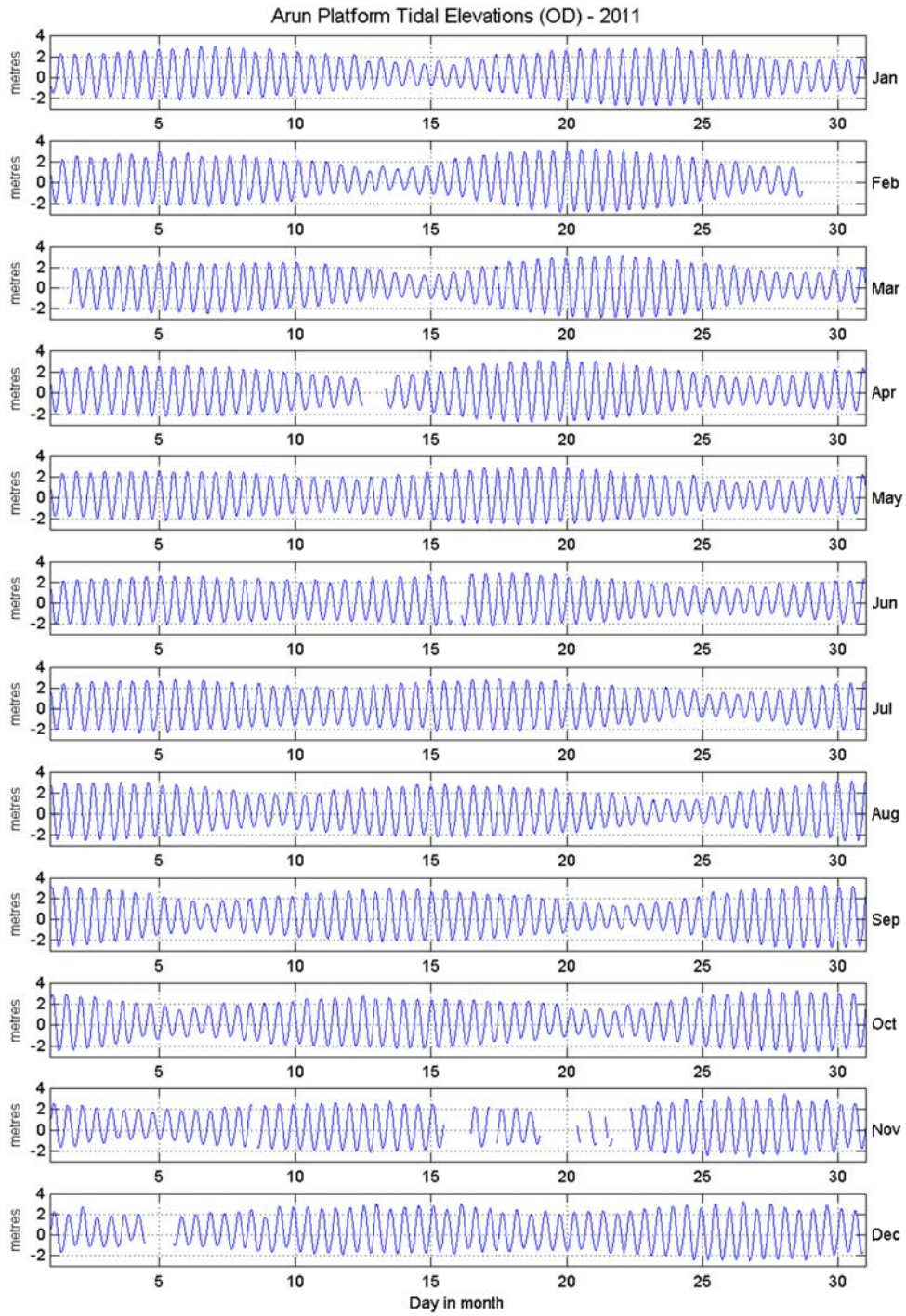


Figure 2: Arun Platform tidal elevations for 2011 relative to Ordnance Datum

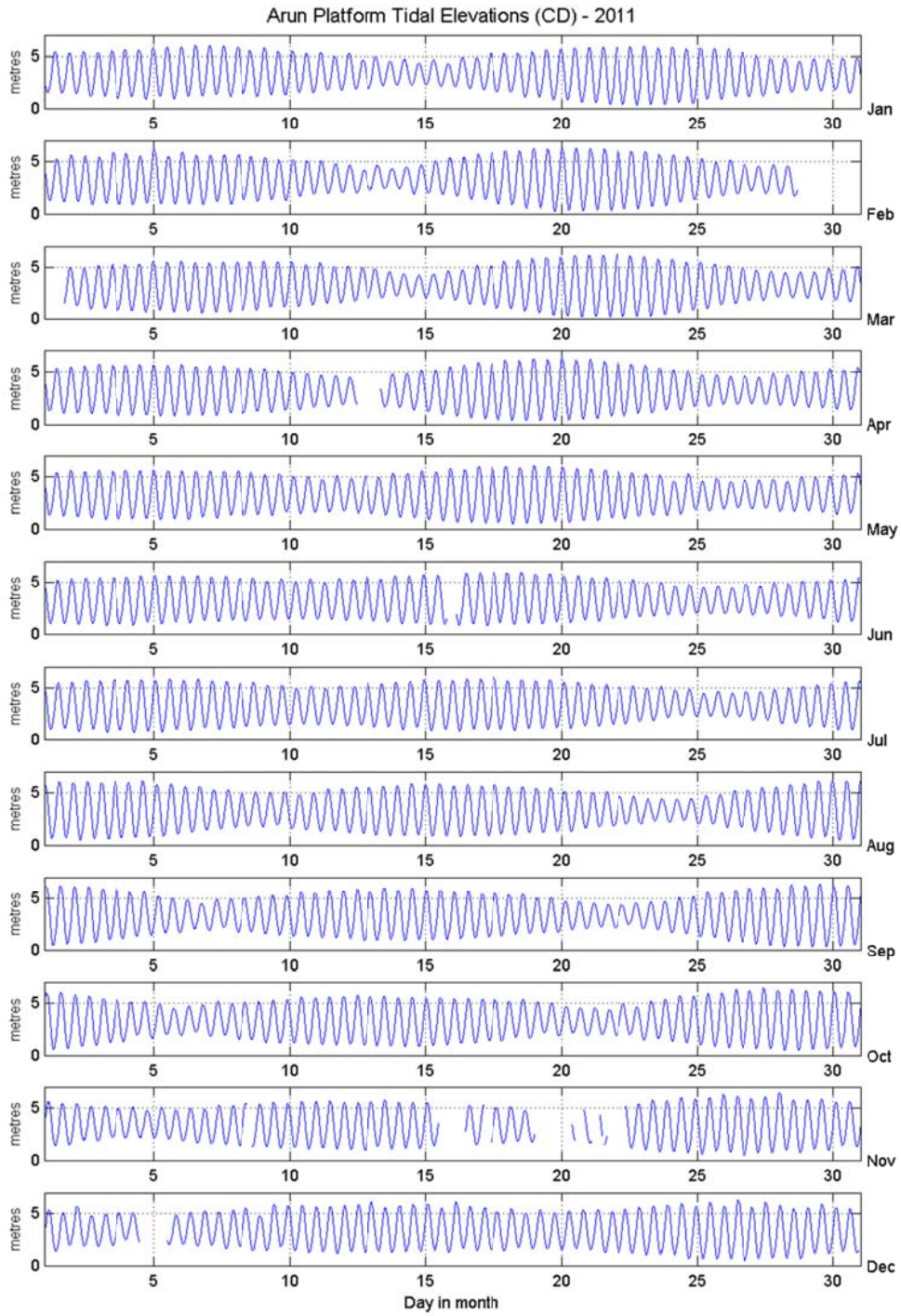


Figure 3: Arun Platform tidal elevations for 2011 relative to Chart Datum